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Z/034/61/000/008/001/005
E073/E335

18.11.50

AUTHORS: Vyklický, Miloslav, Lúbl, Karel, Kabrhel, Adolf,
Tůma, Hanuš, Číhal, Vladimír and Pražák, Milan

TITLE: Influence of Molybdenum and Copper on the Properties
of Stainless Chromium

PERIODICAL: Hutnické listy, 1961, No. 8, pp. 553 - 560

TEXT: According to data published in the literature
(Ref. 2 - Copper in Cast Steel and Iron. Copper Development
Association, London), high-alloy chromium steels containing
2-3% Si and 1.5-2% Cu have a high resistance to alum
and are extensively used in the food-processing industry.
An increased C content in chromium steels reduces their resistance
to corrosion, particularly after unsuitable heat-treatment.
However, low-carbon chromium steels cause difficulties in the
manufacture of castings of complex shapes. Therefore, higher
C contents are used and the unfavourable influence of the C
content is compensated by adding Cu. Although the effect of
Mo on chromium steels is known, the authors are not aware of
any published information on the combined influence of Cu and Mo
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on the properties of chromium steels. This is in spite of the fact that such steels are being manufactured, for instance - the Czech steel Poldi-AK1BC (chemical composition: 0.12% C, 0.50% Mn, 0.25% Si, 16.15% Cr, 0.20% Mo and 1.75% Cu) and the ferritic chromium steel for use in the chemical industry, containing 0.6-0.8% C, max. 0.7% Mn, max. 2% Si, 28.0 - 30.0% Cr, 2.0 - 2.5% Ni, 2.0 - 2.5% Mo and 2.0% Cu. The authors considered it interesting to investigate the influence of Cu and Mo on the properties of chromium steel and this paper contains the results of these investigations. A total of 11 heats was produced with chemical compositions varying between the following limits: C 0.6 - 0.11%; Cu 0 - 6.11%; Cr 14.58 - 26.6% and Mo 0 - 3.91%. The heats were produced in a 20-kg high-frequency furnace, using as a charge low-carbon steel, low-carbon ferrochromium, low-carbon ferromolybdenum and copper. Of the mechanical properties only the hardness was measured. In agreement with data published in the literature, heats with higher copper contents showed a higher hardness, both

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in the as-cast and in the annealed states; metallographic tests showed that addition of Cu brought about pronounced structural changes. The corrosion tests were carried out in a number of corrosive media, subdivided into the following groups:

A. Media with free SO_2

1. H_2SO_3 ; 2%; 20 °C
2. NaHSO_3 ; 5%; 20 °C

B. Organic oxides

3. lactic acid; 10%; 20 °C
4. oxalic acid; 10%; 80 °C
5. citric acid; 10%; 80 °C
6. tartaric acid; saturated solution; 80 °C
7. acetic acid; concentrated; 80 °C

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C. Inorganic non-oxidizing acids

- 8. hydrochloric acid; 8%; 20 °C
- 9. phosphoric acid; 65%; 80 °C

D. Inorganic Oxidizing acids

- 10. nitric acid; 65%; 80 °C .

A detailed analysis allowed grouping the time dependence of the weight loss due to corrosion into three basic groups: linear dependence (in hydrochloric acid and, in some cases, also in nitric acid at 80 °C); parabolic dependence with steepness increasing with time (NaHSO₃ solution) and, finally,

corrosion rate decreasing with time and characterised by a curve which flattens out. The corrosion tests have shown that steel containing 25% Cr, 2% Mo and 2% Cu had the highest resistance to corrosion, which almost equalled the Czech steel CSN 17241. This type of steel was not investigated in the group of the 17% chromium steels. In the latter steel, Card 4/8

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Mo improved the resistance to corrosion in solutions with free SO₂, whilst Cu improved the resistance to corrosion in organic acids. On the basis of laboratory results, SONP Kladno produced two 50-kg heats in a high-frequency furnace with chemical compositions which proved the most favourable in the laboratory tests. The compositions of these heats (in %) were as follows:

Heat	C	Mn	Si	P	S	Cr	Mo	Cu
A 3829	0.13	0.53	0.37	0.019	0.021	15.52	2.05	2.01
B 3830	0.10	0.54	0.30	0.026	0.017	24.75	1.75	1.95 .

The ingots from both heats were forged into 250 x 600 x 20 mm blanks and then rolled down to 1 mm thick sheet. These hot-rolled sheets were then used in mechanical and corrosion tests and in weldability tests. The most favourable heat-treatment for these steels proved to be the following:

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Heat A ... 800 °C/0.5 hrs/air
" B ... 900 °C/0.5 hrs/air.

The mechanical properties of thus heat-treated steels do not differ substantially from the properties of semiferritic steels containing 17% Cr (CSN 17041). After this heat-treatment, both heats proved satisfactory in double-bending tests; in Erichsen tests both heats achieved the value of 7.9 mm. Welding tests were carried out by arc-welding in an argon atmosphere; the weldability of Heat A was better than that of Heat B. Potentiostatic polarisation curves were determined to obtain information on the corrosion behaviour of the steels. The following conclusions were reached: Additions of 2% Mo and 2% Cu proved the most suitable. The resistance-to-corrosion of steels with 17% Cr, 2% Mo and 2% Cu is higher than the resistance-to-corrosion of the same type of steel without Mo and Cu. Very good results were obtained with steel containing 25% Cr and an addition of Mo and Cu which, for most corrosive

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media, will have the same resistance-to-corrosion as the austenitic CrNi steel ČSN 17241. According to the achieved results, the steel with the lower Cr content can be used for less aggressive corrosion media and in cases in which the steel ČSN 17041 cannot be used owing to its lower resistance-to-corrosion or its poor weldability. Steel with a higher Cr content (Heat B) can be used as a substitute for the steel ČSN 17241 but the plasticity and weldability of this material are not as good as those of steel ČSN 17241. There are 17 figures, 7 tables and 12 references: 6 Czech and 6 non-Czech. The four English-language references quoted are: Ref. 1 - Loring - Metals Handbook, pp. 462 - 465; Ref. 2 - (quoted in text); Ref. 3 - Saklatwalla - Dammler, Trans. Am. Soc. Steel. Treat. 15, 1929; Ref. 4 - Daniloff - The Alloys of Iron and Copper. New York and London, 1934.

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24114

Influence of Molybdenum

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ASSOCIATIONS: Státní výzkumný ústav materiálu a technologie v
Praze (State Research Institute for Materials
and Technology, Prague)
Státní výzkumný ústav ochrany materiálu
G.V. Akimova v Praze (G.V. Akimov
State Research Institute for the Protection of
Materials, Prague)

SUBMITTED: November 28, 1960

Card 8/8

PRAZAK, M.

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: State Research Institute for the Protection of Material
(Staatliches Forschungsinstitut fuer Materialschutz), Prague

Source: Prague, Collection of Czechoslovak Chemical Communications,
Vol 26, No 11, November 1961, pp 2828-2837

Data: "Corrosion Study XXIV. The Influence of Temperature
on the Passivating Characteristics of Corrosion Resistant
Steels."

Authors:

✓ PRAZAK, M

✓ SPANILY, J

PBAZAK, M.

Distr: 4E2c(m)

Intergranular corrosion of chromium-nickel steel. V. Chl¹⁸ and M. Pražák (State's Research Inst. Materials Protection, Prague). *Hutnická Listy* 11, 225 (1956); *Corrosion* 16, 530t-532t (1960).—Interocryst. corrosion in Cr-Ni steels is considered from both a theoretical and practical viewpoint. Lab. tests were conducted to det. the effect on Invar alloy and 18 Cr-9 Ni alloy of boiling H₂SO₄ contg. CuSO₄. Specimens subjected to various heat-treatments were tested. Polarization curves and passivation potentials are given. The use of a potentiostat proved helpful in detg. interocryst. corrosion susceptibility, esp. for steels with a low C content and those contg. stabilizing elements which demonstrate only a slight tendency to interocryst. corrosion. The extent of intergranular corrosion depends on the amt. of pptd. Cr carbide and on the oxida.-redn. potential of the soln. Roger W. Ryan

5
2-MJC (DD)(CL)
1

PRAZAK, M.

Corrosion studies. XXIII. Passivity of Sn75-Zn alloys. Coll Cz Chem
25 no.4:1126-1131 Ap '60. (EEAI 9:12)

1. Staatliches Forschungsinstitut für Materialschutz, Prag.
(Corrosion and anticorrosives)
(Tin-zinc alloys)

PRAZAK, Milan

Gastric hemangiomas. Rozhl.chir. 39 no.9:593-596 S '60.

1. Oddeleni pro chirurgii hrudni a břišní Ustřední vojenské
nemocnice, přednosta MUDr. Bedrich Placák.
(STOMACH NEOPLASMS case reports)
(HEMANGIOMA case reports)

Distr: 4E2C

✓ The formation of passive layers on chromium steels. M. Pražák, V. Pražák, and V. L. Čížal (Inst. Material Protection, Prague). *Z. Elektrochem.* 62, 739-45(1958) (English summary).—With the aid of an electronically regulated potentiostat, the authors recorded the polarization curves of steels with 0 to 35% Cr in NH_4SO_4 . In the region of transpassivity, 2 limiting compns. were distinguished. Up to 16% Cr content, no continual corrosion occurred. Steels with 18 to 30% Cr content were continuously attacked, but exhibited secondary passivity. Steels with more than 35% Cr content were continuously attacked and did not show secondary passivity. This corrosive behavior is attributed to the properties of the corresponding oxide layers and an explanation is proposed on the basis of the formation of the cryst. structure of the oxidic layers. Qual. changes in the properties of the oxide could occur in the case of a spinell structure, when the no. of Cr ions in the spinell basic structure exceeds $1/4$ and $1/2$ of the no. of lattice positions for the trivalent cations. These limiting conditions correspond to a theoretical compn. of 16.5 or 30.7% Cr, resp., in the Fe-Cr alloy, which is in good agreement with the measured values. On the basis of these ideas, the mechanism of corrosion in the transpassive region can be explained as well as the cause of the secondary passivity, which the authors attribute to O_2 adsorption. H. H. Jaffe

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PRAZAK, M.; KUBEK, A.

Mechanization of loading in machine tools. p. 431

STROJIRENSKA VYROBA. (Ministerstvo tezkeho strojirenstvi, Ministerstvo presneho strojirenstvi a Ministerstvo automobiloveho prumyslu a zemedelskych stroju)
Praha, Czechoslovakia. Vol. 7, No. 10, Oct. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 12, Dec. 1959
Uncl.

Distr: 4R2c

18
Differentiation of phases in metallographic etching.
I. Electrolytic etching at a controlled potential. Milan
Pražák, Vladimír Čihál, and Miroslav Holinka (Výzkumný
ústav ochrany materiálu, Prague). Chem. listy 52, 1693-8
(1958).—A method is given for the detn. of the differentia-
tion degree of individual phases of a composed metallic
electrode in the electrolytic etching which is based on the
comparison of their potential polarization curves. A method
is suggested for the detn. of a potential suitable for the selec-
tive etching of a given phase. The method is successfully
applied to the etching of the ferrite and austenite in a steel
alloy (18% Cr-0% Ni, stabilized with Ti). B. Erdős

JW
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Sh

PRAZAK, Mieczyslaw; PYTASZ, Marian

Statistical analysis of the excretion of ammonia, urea and glucose
and Klisieski's renal theory. Acta physiol.polon. 12 no.1:87-103
Ja-F '60.

1. Z Zakladu Matematyki W.S.R. we Wroclawiu. Kierownik: doc.dr
R. Hohenberg. Z Zakladu Fizjologii A.M. we Wroclawiu. Kierownik:
prof.dr A. Klisieski.

(AMMONIA urine)

(UREA urine)

(GLUCOSE urine)

CZECHOSLOVAKIA/Solid State Physics - Phase Transition.

E

Abs Jour : Ref Zhur Fizika, No 11, 1959, 24924

Author : Prazak, M., Cihal, V., Holinka, M.

Inst :

Title : On the Differentiation of Structural Phases During
Metallographic Etching. I: Electrolytic Etching with
Constant Potential.

Orig Pub : Collect. Czechosl. Chem. Commun. 1959, 24, No 1, 9-15

Abstract : Translated from Chem. listy, 1958, 52, 1693.

Card 1/1

Prálek
Distr: hE2c

Differentiation of phases in metallographic etching. I.
Electrolytic etching at a controlled potential. *M. Prálek*.
777/ *V. Čihál, and M. Holinka. Collection Czechoslov. Chem.*
Communs. 24, 9-16 (1959) (in German).—See C.A. 53,
158f. *M. Hudlický*

PRAZAK, M.

Modernization of the U-type grinding machines. p.224.
(Strojirenska Vyroba, Vol. 5, No. 5, May 1957, Prava, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

PRAZAK, Milan

Lung inflammation in the postoperative period. Rozhl. chir. 37 no.3:
186-190 Mar 58.

1. Oddeleni pro chirurgii hrudni a brisni Utredi vojenske nemocnice
prednosta B. Placak.

(PNEUMONIA

postop. (Cz))

(SURGERY, OPERATIVE, compl.

postop. pneumonia (Cz))

CZECHOSLOVAKIA/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26304

Author : Milan Prazak

Title : Potentiostat and Some Problems of Polarization of Solid Electrodes

Orig Pub : Slahoproudny obzor, 1956, 17, No 4, 237-240

Abstract : The causes of the distortion of polarization curves at their measurement by the superposition of the voltage taken with a potentiograph were analysed. On curves with a continuous current rise, only a potential drop on the electrode under study in the amount of the magnitude of the voltage drop in the measuring circuit is observed. On curves with a negative characteristics, this method fails to measure the region of the current drop with the potential rise (passivation), because it proves to be instable. An electron potentiostat constructed by the author is described; this potentiostat is provided with photographic recording of polarization curves by means of a cathode oscillograph. The potential of the electrode under study is measured in respect to a comparison electrode, and the resistance of the measuring circuit is very little (about 0.3 ohm). The current strength may be 100 ma in each

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CZECHOSLOVAKIA/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26304

direction, or 200 ma in one direction. Examples of polarization curves showing the applicability of the potentiostat for the study of corrosion of metals are given. The potentiostat can maintain the potential stable with the precision of 2 to 3 mv in the duration of 15 min.

Card : 2/2

CZECHOSLOVAKIA /Corrosion - Protection from Corrosion

J.

Abs Jour : Ref Zhur - Khimiya, No 2, 1957, 6855

Author : Prazak Milan, Prazak Vilem

Inst :

Title : Passivity and Corrosion Resistance of Stainless Steel

Orig Pub : Hutnicke listy, 1956, 11, No 2, 91-98

Abstract : By plotting the polarization curves a study is made of the mechanism of passivation, primarily of chromium-alloy stainless steel.

Card 1/1

PRAZAK, M.

Category: Czechoslovakia

B-12

Abs Jour: R Zh--Kh, No 3, 1957, 7686

Author : Prazak, M. and Prazak, V.

Inst : Not given

Title : Investigation of Corrosion. II. The Effect of the Electrical Properties of the Electrode on the Measurement of the Potential During Polarization with an Intermittent Current. III. Anode Passivation of Iron and Cathode Passivation of Magnetite.

Orig Pub: Chem. Listy, 1955, Vol 49, No 3, 294-301; No 8, 1139-1143 (published in Czech); Sb. Chekhosl. Khim. Rabot, 1956, Vol 21, No 1, 63-72, 73-78 (published in German with a Russian summary)

Abstract: II. With a view towards the investigation of the effect of the electrical properties of the interface between a solid electrode (e) and an electrolyte on the intrinsic electrochemical potential (EP) of E during polarization in an intermittent current, the appropriate oscillograms have been recorded for anode-polarized Sb and Al electrodes and 0.25M NaHCO₃ and for an Fe electrode in 0.1M NaNO₂ as well as for specially

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Category: Czechoslovakia

Abs Jour: R Zh--Kh, No 3, 1957, 7600

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between the equilibria Fe/FeO and $\text{FeO/Fe}_2\text{O}_3$, both Fe and I dissolve in H_2SO_4 . At more negative potentials, Fe^{3+} is stable; I is stable at more positive potentials. However, even in the passive state Fe and I dissolve slowly; the corrosion currents correspond to the diffusion rate or to the rate of the solid phase reaction. For Communication I see RZhKhim, 1956, 50381.

Card : 3/3

-22-

FRAZAK, M.

Modernization of the U type grinding machines. p. 179. (Strojirenska Vyroba. Praha.
Vol. 5, no. 4, Apr. 1957.)

SO: Monthly List of East European Accessions (EEAL) IC. Vol. 6, no. 7, July 1957. Uncl.

PRAZAK, MILAN

CZECH

(Corrosion studies. II The effect of the electrical properties of the electrode on potential measurements during interrupted-current polarization. Milan Prazak, Vilem Prazak (Vysk. ústav chemicky metal., Praha, Ckem. Listy 40, 281-291, 1955), J. C. A. 43, 10477; Czech measurement of the electrochem. potential of a solid electrode was discussed. Simplified equiv. circuits including an electrochem. potential, resistance, and parallel capacity were proposed. Interrupted current was used and oscilloscope analysis applied to prove these schemes valid. The

Prace, 11
GDR/Physical Chemistry - Electrochemistry

B-12

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30655

Author : Prazak, M., Prazak, V., Cihal, V.

Inst : Not given

Title : The Structure of the Passivating Films Formed
on Chromium Steels

Orig Pub: Z Elektrochem, 1958, No 6-7, 739-745

Abstract: The authors have recorded the anodic polarization curve of chromium steels (CS) containing from 0 to 35% Cr in 1 N H₂SO₄. The curves were recorded with the potentiostat described in an earlier report (RZhKhim, 1957, 26304) permitting a rate of voltage change of 0.017 v/sec [sic]. The basic measurements were made in the potential range 1.0-2.0 v (standard hydrogen electrode; in which 2 types of processes were observed:

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GDR/Physical Chemistry - Electrochemistry

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Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30655

overpassivation (OP), i.e., dissolution with the formation of chromate ions, and the inhibition of that process, secondary passivation. In the opinion of the author secondary passivation results from the adsorption of oxygen evidence for which is supplied by the results from measurements of the impedance of the electrode (appearance of a maximum capacitance at $\varphi = 1.81$ v; the height of the maximum increases when the frequency of the applied a-c current increases). At Cr contents of less than 16% the polarization curves do not show a section corresponding to OP and the rate of dissolution remains practically constant up to the φ for O_2 evolution. At Cr contents of 18-30% both OP and secondary passivation are observed; the onset of the latter is made more difficult when the Cr

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L 21104-66 EWA(d)/EWP(t) LIP(c) JM/JG/WR

ACC NR: AP6008678 (N) SOURCE CODE: CZ/0065/65/000/005/0421/0430

AUTHOR: Tousek, Jaromir—Toushek, Yaromir; Cihal, Vladimir—Chigal, -
Vladimir; Prazak, Milan—Prazhak, Milan

ORG: Institute for the Properties of Metals CSAV, Brno (Ustav
vlastnosti kovu CSAV); State research institute for the protection of
materials G. V. Akimov, Prague (Statni vyzkumny ustav ochrany materialu)

TITLE: The problem of point corrosion of Cr-Ni steels modified by
molybdenum

SOURCE: Kovove materialy, no. 5, 1965, 421-430

TOPIC TAGS: steel, austenitic steel, corrosion, corrosion resistance,
molybdenum, chromium content, annealing

ABSTRACT: The resistance of austenitic Cr-Ni steels (1Cr17Ni12Mo2Ti)
against point corrosion rises with increasing Mo and Cr contents and
falls with increasing content of Ti. The favorable effect of molyb-
denum is first felt when its concentration is higher than 2%. The
rising concentration of chromium in steel increases its resistance
against point attack up to a specified limit. In steels subjected to
solution annealing, the resistance against corrosion increases with
rising Cr content up to 18%. Further increase of Cr concentration does

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ACC NR: AP6008678

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not improve the resistance of these steels to point attack. Results obtained with steels which had been subjected to various heat treatments indicate that specimens which had been subjected to solution annealing (1100C/30 min/water) were maximally resistant to point corrosion. Specimens which had been only heat worked were less resistant, and the least resistant to point corrosion were the specimens annealed at 900C. Under specified conditions (0,6 N HCl + 0,4 N H₂SO₄), the zone of transpassivity on potentiodynamic curves in potential polarization of these steel specimens containing more than 15% Cr occurs. In this zone, point as well as uniform corrosion takes place. On steels containing less than 17% Cr, point attack is present even at potentials under which the reactions leading to secondary passivity, start to act. With increasing Cr content, the value of the potential under which the point attack may occur decreases. This shifting is probably caused by deposition of corroded particles and by adsorption of chromate ions on the surface of the electrode. Point corrosion ceases before the potential attains the value at which the current density in the transpassive zone attains its maximum value on steels with higher chromium content than 17—18%. On the potentiodynamic curves, the extinction of point corrosion is evident from the transient drop in current density even before secondary passivity is attained. The paper was reviewed by Karel Lobl, State research

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ACC NR: AP6008678

institute for materials and technology, Prague (Statni vyzkumny ustav
materialu a technologie). Orig. art. has: 6 figures and 2 tables.
[Based on author's abstract.] [KS]

SUB CODE: 11, 20/ SUBM DATE: 02Feb65/ ORIG REF: 004/ OTH REF: 001
SOV REF: 001

Card 3/3 11

PRAZAK, V.

GEOGRAPHY & GEOLOGY

PERIODICAL: CESKOSLOVENSKA ETHNOGRAFIE. Vol. 6, no. 4, 1958.

PRAZAK, V. Basic types of ground plans for folk buildings in Czechoslovakia. Pt. II.
(Conclusion) p. 331.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 2
February 1959, Unclass.

~~PRAZAK, V. Ing.~~

JUREN, O. MUDr.; KUBISTA, Z., Ing.; PRAZAK, V. Ing.

Value of potassium bichromate test in cement eczema. Pracovní lek.
9 no.4:330-332 Sept 57.

1. I. dermatologická klinika, Praha, přednosta prof. Dr. K. Gavalowski
A Vyzkumny ustav ochrany materialu, Praha, přednosta Ing. M. Roubal.
O. J., Praha 2, Koubkova 10.

(DERMATITIS CONTACT, etiol. & pathogen.

chromium in cement workers, potassium bichromate test
(Cz))

(CHROMIUM, inj. eff.

contact dermatitis in cement workers, potassium bichromate
test (Cz))

Prazak, V.
GDR/Physical Chemistry - Electrochemistry

B-12

Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30655

Author : Prazak, M., Prazak, V., Cihal, V.

Inst : Not given

Title : The Structure of the Passivating Films Formed
on Chromium Steels

Orig Pub: Z Elektrochem, 1958, No 6-7, 739-745

Abstract: The authors have recorded the anodic polarization curve of chromium steels (CS) containing from 0 to 35% Cr in 1 N H₂SO₄. The curves were recorded with the potentiostat described in an earlier report (RZhKhim, 1957, 26304) permitting a rate of voltage change of 0.017 v/sec [sic]. The basic measurements were made in the potential range 1.0-2.0 v (standard hydrogen electrode); in which 2 types of processes were observed:

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GDR/Physical Chemistry - Electrochemistry

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Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30655

overpassivation (OP), i.e., dissolution with the formation of chromate ions, and the inhibition of that process, secondary passivation. In the opinion of the author secondary passivation results from the adsorption of oxygen evidence for which is supplied by the results from measurements of the impedance of the electrode (appearance of a maximum capacitance at $\varphi = 1.81$ v; the height of the maximum increases when the frequency of the applied a-c current increases). At Cr contents of less than 16% the polarization curves do not show a section corresponding to OP and the rate of dissolution remains practically constant up to the φ for O_2 evolution. At Cr contents of 18-30% both OP and secondary passivation are observed; the onset of the latter is made more difficult when the Cr

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GDR/Physical Chemistry - Electrochemistry

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Abs Jour: Referat Zhur - Khim, No. 9, 1959, 30655

content is increased and at Cr contents of over 35% secondary passivation is completely absent. The authors are of the opinion that the corrosion resistance of CS is determined by the characteristics of the passivating oxide layer, which has a spinel structure (RZhKhim, 1957: 7688) and a composition corresponding to $\text{Fe}_2^{+}(\text{Cr, Fe})_2^{3+}\text{O}_4$. When the Cr content of the oxide layer is varied continuously by appropriate changes in the composition of the CS, discreet variations are observed in the properties of the oxide layer.-- V. Knyazheva

Card 3/3

Some vitamins necessary for bacterial growth. V. Pyada. - *Sbornik Lekarsky* 47, No. 1/2, 30-66(1946); *Biol. Abstracts* 22, No. 5, 1130(1948). - The mechanism of the bacteriostatic action of the sulfonamides and the function of the *p*-aminobenzoic acid, the main antisulfonamide factor, are reviewed. P. discusses the biochem. reaction between vitamin and the antivitamin and explains the

chemotherapeutic interference between the *p*-aminobenzoic acid and sulfanilamide. Some synthetic vitamins are labeled antivitamins. Further, a detailed analysis of the antagonism between the vitamins and the antivitamin is given on the basis of comparing the relation of the chem. structure of the sulfanilamide to the *p*-aminobenzoic acid. Analogous reactions were also recognized in the further pairs: pantothenic acid-sulfopantothenic acid and nicotinic acid-pyridinesulfonic acid. The esters of *p*-aminobenzoic acid, used customarily in practice as a local anesthetic of the type of procaine can theoretically disturb the efficacy of the sulfonamides. The biol., phys., and chem. properties of the individual vitamins necessary for bacterial growth are dealt with: aminobenzoic acid, nicotinic acid (amide) and pantothenic acid, their significance for macro- and microorganisms and the sources of their occurrence in nature are discussed. P. gives a brief outline of the disturbances of the functioning of the organism caused by their deficiency in connection with the assessing of their biol. significance.

R. D. H.

PRAŽÁK, VÁCLAV

Effect of procaine on the circulatory system. Otakar Poupa and Václav Pražák (Charles Univ., Prague). *Biol. Listy* 31. 218-24 (1951). Procaine (1 γ intracardially) suppressed only slightly the action of adrenaline and of acetylcholine on frog arteries, increased markedly the effect of adrenaline and suppressed considerably the action of acetylcholine on frog veins. It suppressed completely secondary vasodilation following adrenaline administration.

Oldrich Setek

PRAŽÁK, V

Effect of sulfonamides on enzyme systems. V. Pražák
(State Inst. Health, Prague). *Biol. Listy* ~~1951~~
(1951).—Local, oral, and parenteral administration of
sulfonamides to rabbits inactivated the hyaluronidase and
thus prevented the spreading of bacterial infections.
Oldrich Sebek

PRAZAK, V.;SOYKA, O.;AMCHOVA, E.

Effect of chemotherapeutic agents and antibiotics on blood coagulation.
Cesk. lek. cesk. 92 no.40:1096-1098 2 Oct 1953. (CML 25:4)

1. Of the Third Internal Clinic (Head--Prof. J. Charvat, M.D.) and of
the First Institute of Medical Chemistry (Head--Prof. K. Kacel, M.D.),
Charles University, Prague.

PRAZAK, Vaclav, Doc., Dr.

Complement in pneumonia treated with penicillin & sulfonamides.
Cas. lek. cesk. 94 no.23:624-628 3 June 55.

1. Z III. int. kliniky akademika Charvata. Za techn spoluprace
Dr. Evy Amchove. K 80. narozeninam akademika J. Pelnare.

(PNEUMONIA, blood in

complement after penicillin & sulfonamides ther.)

(COMPLEMENT

in pneumonia, after penicillin & sulfonamide ther.)

(PENICILLIN, ther. use

pneumonia, causing complement.)

(SULFONAMIDES, ther. use

pneumonia, causing complement.)

Distr: 4E2c

✓ The formation of passive layers on chromium steels. M. Pražák, V. Pražák, and V. L. Čihál (Inst. Material Protection, Prague). Z. Elektrochem. 62, 739-45(1958) (English summary).—With the aid of an electronically regulated potentiostat, the authors recorded the polarization curves of steels with 0 to 35% Cr in NH_4SO_4 . In the region of transpassivity, 2 limiting compns. were distinguished. Up to 18% Cr content, no continual corrosion occurred. Steels with 18 to 30% Cr content were continuously attacked, but exhibited secondary passivity. Steels with more than 35% Cr content were continuously attacked and did not show secondary passivity. This corrosive behavior is attributed to the properties of the corresponding oxide layers and an explanation is proposed on the basis of the formation of the cryst. structure of the oxidic layers. Qual. changes in the properties of the oxide could occur in the case of a spinell structure, when the no. of Cr ions in the spinell basic structure exceeds $1/4$ and $1/2$ of the no. of lattice positions for the trivalent cations. These limiting conditions correspond to a theoretical compn. of 15.5 or 30.7% Cr, resp., in the Fe-Cr alloy, which is in good agreement with the measured values. On the basis of these ideas, the mechanism of corrosion in the transpassive region can be explained as well as the cause of the secondary passivity, which the authors attribute to O adsorption.

H. H. Jaffe

58
111

1/1

PRAZAK, VILEM

Corrosion studies. III. Anodic passivation of iron and cathodic passivation of magnetite. Milan Prazak and Vilem Prazak (Vyzkumny ustav ochrany materialu, Prague). Chem. Listy 49, 1139-43 (1955); cf. C.A. 49, 8405a. — The course of anodic passivation of iron and of cathodic passivation of magnetite in $N H_4SO_4$ is analogous; in both cases a passive layer (with its own characteristic potential) is formed which is stable under given passivation conditions. In the anodic process an oxide layer is formed on the iron; in the cathodic process a layer of iron is formed on magnetite. The potential of destroying the passive layer corresponds to the equil. FeO/Fe_3O_4 ; the potential of destroying the metallic passive layer corresponds to the equil. Fe/FeO . The corrosion current in passive states is controlled by the reaction rates in the solid state and is influenced by the nature of the passive layer. B. Brdcs

MG

① ger

of

Prazak, V.

Passivity and corrosion resistivity of stainless steel. p. 65.
HUTNICKE LISTY. (Ministerstvo hutního průmyslu a rudných dolů)
Brno. Vol. 11, no. 2, Feb. 1956.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

PRAZAK, VILÉM

PH
Corrosion studies. II. The effect of the electrical properties of the electrode on potential measurements during interrupted current polarization. Milan Prazak. *Collection Czechoslovak Commun.* 21, 1968, 1-8. See C.A. 49, 9155a. II. Anodic passivation of iron and cathodic passivation of magnetite. *Ibid.* 71-8. See C.A. 49, 13987d. H. J. C.

CP

PRAZAK, V.

✓ On the Passivity and Corrosion Resistance of Stainless Steels.
M. Pražák and V. Pražák. (Hutnické Listy, 1968, 11, (2),
81-97). [In Czech]. Chemical passivation of metals in
oxidizing solutions was compared with anodic passivation,
with particular reference to 18/8 steels. On the basis of the
researches it is now possible to determine with considerable
precision the conditions under which the metal is corrosion
resistant, particularly in the passive state. Such deter-
minations can also be made on phases present in alloys in
small amounts if a metallographic microscope is used in
addition to the oscillographic equipment for recording the
polarization curves.—P. P.

3

of

Prazak, V.

CHEMICKIE LISTY
Vol. 50(80), No. 1
January, 1956

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Corrosion Studies V.: The Mechanism of the Chemical Passivation and the Corrosion of Metals.

The chemical and electrochemical passivation and the corrosion of iron in nitric acid solutions of different concentration were compared. A diagram expressing the corrosion behaviour of iron in this medium was constructed. Results obtained showed that there is no difference (fundamental difference between the mechanism of the chemical and electrochemical corrosion reactions. The course of the chemical corrosion reaction can be described quantitatively by means of partial currents, i.e. in electrochemical terms.

By M. Prazak & V. Prazak.....

LFH

PRAZAK, V.

Category: Czechoslovakia

B-12

Abs Jour: R Zh--Kh, No 3, 1957, 7688

Author : Prazak, M. and Prazak, V.

Inst : Not given

Title : Investigation of Corrosion. II. The Effect of the Electrical Properties of the Electrode on the Measurement of the Potential During Polarization with an Intermittent Current. III. Anode Passivation of Iron and Cathode Passivation of Magnetite.

Orig Pub: Chem. Listy, 1955, Vol 49, No 3, 294-301; No 8, 1139-1143 (published in Czech); Sb. Chekhosl. Khim. Rabot, 1956, Vol 21, No 1, 63-72, 73-78 (published in German with a Russian summary)

Abstract: II. With a view towards the investigation of the effect of the electrical properties of the interface between a solid electrode (e) and an electrolyte on the intrinsic electrochemical potential (EP) of E during polarization in an intermittent current, the appropriate oscillograms have been recorded for anode-polarized Sb and Al electrodes and 0.25M NaHCO_3 and for an Fe electrode in 0.1M NaNO_2 as well as for specially

Card : 1/3

-20-

Category: Czechoslovakia

B-12

Abs Jour: R Zh--Kh, No 3, 1957, 76-8

selected electrical systems consisting of ohmic resistances (R) and capacitances (C), designed to simulate the system formed by the solid electrode and the electrolyte (the latter system was conceived as a condenser, the plates of which are formed by E and the electrolyte; the dielectric is the oxide film on E). A comparison of the results obtained from measurements on the equivalent circuits with the data obtained from electrochemical measurements shows that during polarization by an intermittent current, the R and C of the interface markedly affect the EP of E. The changes in EP depend on the RC product and are particularly large for passive E covered with strongly insulating films.

III. The oscillographic method has been used in the investigation of the cathodic passivation of magnetite (I) and of the anodic passivation of Fe in $\text{IN H}_2\text{SO}_4$. The potential of the passive layer formed in anodic passivation corresponds to the equilibrium $\text{FeO}/\text{Fe}_2\text{O}_3$. In cathodic passivation the potential of the passive layer corresponds to the equilibrium Fe/FeO . At values of the potential lying in the region

Card : 2/3

-21-

Category: Czechoslovakia

Abs Jour: R Zh--Kh, No 3, 1957, 7688

B-12

between the equilibria Fe/FeO and $\text{FeO}/\text{Fe}_2\text{O}_3$, both Fe and I dissolve in H_2SO_4 . At more negative potentials, Fe^{3+} is stable; I is stable at more positive potentials. However, even in the passive state Fe and I dissolve slowly; the corrosion currents correspond to the diffusion rate or to the rate of the solid phase reaction. For Communication I see RZhKhim, 1956, 50381.

Card : 3/3

-22-

PRAZAN, Frantisek

Ninth International Congress of the European Brewing Convention
in Brussels. Kvasny prum 9 no.8:186-187 Ag '63.

1. Podnikovy reditel Prazskych pivovaru, n.p., Praha.

BOCIAN, Jerzy; PRAZANOWSKI, Mirosław; WAWRZYŃSKA, Jadwiga; STASIK, Mirosław

A case of discastlosis with symptoms of Addison-Biermer's anemia
in lamblasis. Wiad. parazyt. 7 no.3:579-585 '61.
(LAMBLIASIS diag) (ANEMIA PERNICIOUS diag)

MARKIEWICZ, Kazimierz, dr. med.; PRAZANOWSKI, Miroslaw; CHRZANOWSKI,
Zenon; BOGDANSKA, Helena

Symptomatic polycythemia in renal cancer. Pol. tyg. lek. 12
no.48:1859-1860 30 N'64.

L. Z Oddzialu "A" Chorob Wewnetrznych Szpitala im. M. Piorowskiego
w Lodzi (ordynator: dr. med. Kazimierz Markiewicz).

KUNSKI, Henryk; PRAZANOWSKI, Miroslaw

A case of reticulosarcoma with intravital observations. Polskie arch.
med. wewn. 29 no.7:959-964 1959.

1. Z Oddzialu Wewnetrznego Szpitala im. M. Pirogow w Lodzi Ordynator:
dr med. E. Panasiuk.

(SARCOMA RETICULUM CELL, case reports)
(NASOPHARYNX, neopl.)

PRAZDNIKOV, A.V., kand. tekhn.nauk, red.; BYSTRITSKAYA, V.V., red.
izd-va; UVAROVA, A.F., tekhn. red.

[Dynamics of machines] Dinamika mashin; sbornik statei. Mo-
skva, Mashgiz, 1963. 278 p. (MIRA 16:8)

1. Vsesoyuznoye soveshchaniye po osnovnym problemam teorii
mashin i mekhanizmov. 3, Moscow, 1961.
(Machinery, Kinematics of)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V., *Food. tekhn. nauk*; SMOLYANTSEV,
E.A., *inzh.*

Using an electronic model in selecting optimal parameters of a
high-speed mechanism with a throttle servomechanism. *Gidr.*
mash. i gidr. no.1:94-102 '65. (MIRA 18:12)

1. Dnepropetrovskiy institut chernoy metallurgii.
2. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).

PRAZDNIKOV, A.V., kand. tekhn. nauk

Dynamic synthesis of a hydraulic mechanism with a proportioning pump. Gidr. mash. i gidr. no.1:103-110 '65.

(MIRA 18:12)

1. Dnepropetrovskiy institut chernoy metallurgii.

KOZHEVNIKOV, S.N.; CHERNYSHYEV, A.N., kand.tekhn.nauk; PRIZDNIKOV, A.V., inzh.

Experimental investigation of cold pipe-rolling mills. Izv.
vys.ucheb.zav.; chern.met. no.6:91-98 Je '58. (MIRA 12:8)

1. Dnepropetrovskiy metallurgicheskiy institut. 2. Chlen-
korrespondent AN USSR (for Kozhevnikov). Rekomendovano
kafedroy avtomatizatsii i teorii mekhanizmov i mashin Dnepropetrov-
skogo metallurgicheskogo instituta.
(Rolling mills) (Pipe, Steel)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V.

Dynamics of the hydraulic drive of the feeding carriage travel
mechanism on Pilgrim rolling mills. Izv. vys. ucheb. zav.; chern.
met. no.8:188-194 '60. (MIRA 13: 9)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Rolling mills--Hydraulic driving)

S/198/63/009/001/005/006
D251/D303

AUTHORS:

Kozhevnykov, S.M., Prazdnikov, A.V. and Smolyanyts'kyy, E.A. (Dnipropetrovs'k)

TITLE:

A new edging mechanism for an automatic blooming mill

PERIODICAL:

Prykladna mekhanika, v. 9, no. 1, 1963, 86-93

TEXT:

The results of a recent All-Union conference on the automation of blooming mills showed that many institutes are greatly concerned with the designing of automatic blooming mills. The hook-edgers used in manual control are not suitable for automation, and a new edger must be designed. It is shown that the working part of the synthesis mechanism should be at an angle and that during the entire operation the movement of the ingot is controlled by the executive unit. Such an edger will fulfil the requirement of minimum displacement of the manipulator rulers for edging ingots of various heights, if it has two leading units. The reduction of edging time is discussed, with reference to the 'Sack' and 'Shloemann' blooming mills, in which two hook edgers on the left and right rulers before

Card 1/2

A new edging mechanism ...

S/198/63/009/001/005/006
D251/D308

the mill are used, and the kinematics of an ideal blooming regime are discussed. The designing of actual edging mechanisms will depend on the number of regimes required for the mill. There are 6 figures.

ASSOCIATION: Dnipropetrovs'kyy instytut chornoyi metalurhiyi
(Dnipropetrovs'k Institute of Ferrous Metallurgy)

SUBMITTED: April 16, 1962

Card 2/2

KOZHEVNIKOV, S. N. [Kozhevnykov, S. M.] (Dnepropetrovsk); PRAZDNIKOV,
A. V. [Prazdnykov, A. V.] (Dnepropetrovsk); SMOLYANITSKIY, E. A.
[Smolianyts'kyi, E. A.] (Dnepropetrovsk)

New manipulation mechanism for an automatic blooming mill.
Prykl. mekh. 9 no.1:86-93 '63. (MIRA 16:4)

1. Dnepropetrovskiy institut chernoy metallurgii.

(Rolling mills)

PRAZDNIKOV, A. V., Cand of Tech Sci — (diss) "Dynamics of Dropping Apparatus for Pilger Mills," Dnepropetrovsk, 1959, 18 pp (Dnepropetrovsk Metallurgical Institute in Stalin) (KL, 4-60, 120)

PYTASZ, Marian; GARBULINSKI, Tadeusz; KURBIEL, Andrzej; PRAZAK, Mieczyslaw

Electrolytes and urinary reactions in the light of experiments
and statistical analysis. Acta physiol. polon. 11 no.2:251-265
Mr-Apr '60.

1. Z Zakladu Chemii Fizjologicznej WSR we Wroclawiu, Kierownik:
z-a prof. dr F. Wandokanty; Z Zakladu Fizjologii AM we Wroclawiu,
Kierownik: prof. dr A. Klisiecki; Z Zakladu Matematyki WSR we
Wroclawiu, Kierownik: doc. dr R. Hochenberg.
(ELECTROLYTES urine)

PRAZDNIKOV, A.V.

Dynamics of the main line of a Pilgrim mill including the hitting
of the cylindrical billet against the rolls. Izv.vys.ucheb.zav.;
chern.met. no.4:184-191 '61. (MIRA 14:4)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Rolling mills)

BARU, A.V.; BOLOTINA, O.P.; PAVLOV, B.V.; PRAZDNIKOVA, N.V.; SAF'YANTS,
V.I.; CHEBYKIN, D.A.

Influence of alimentary excitability, and the size and quality of
alimentary reinforcement on the conditioned reflex activity of
representatives of some classes of vertebrates (fishes, birds,
and mammals). Trudy Inst. fiziol. 9:274-284 '60. (MIRA 14:3)

1. Laboratoriya sravnitel'noy fiziologii vysshey nervnoy deyatel'nosti
(zaveduyushchiy - B.V.Pavlov) Instituta fiziologii im. I.P.Pavlova.
(CONDITIONED RESPONSE) (NUTRITION)
(VERTEBRATES)

L 2693-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) IJP(c) BC

ACCESSION NR: AT5022816

UR/3165/65/000/001/0094/0102

AUTHOR: Kozhevnikov, S. N. (Corresponding member AN UkrSSR); Prazdnikov, A. V.
(Candidate of technical sciences); Smolyanitskiy, E. A.

TITLE: Selection of optimal parameters for a high-speed throttle servo control
mechanism with an electronic model

SOURCE: Ukraine. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.
Gidravlicheskiye mashiny i gidroprivod, no. 1, 1965. Issledovaniye gidravli-
cheskikh ustroystv i sistem (Investigation of hydraulic devices and systems),
94-102

TOPIC TAGS: servomechanism, optimal control, mathematic model, machine tool

ABSTRACT: The present paper considers the problem of utilizing a servo throttle
hydraulic drive with rigid negative feedback, operating on water, and using
remote manual or automatic control for the mechanisms of heavy high-speed ma-
chines. The drive should be capable of performing the following functions:
a) Operate the mechanisms controlled by it in a broad range of speed; in this
case, the maximum speed may reach one or several meters per second. b) Assure
the braking of the moving parts of the mechanism within the limits specified by

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ACCESSION NR: AT5022816

the conditions of endurance and durability of the mechanism. c) Carry out the prescribed displacement of the piston to an accuracy of from one to several millimeters. d) Assure the stability of the system along the entire range of changing speeds. The data obtained from processing the oscillograms obtained show good agreement between the data of the electronic and the physical models, and, therefore, a good approximation of the mathematical description of the processes in the high-speed servo drive. It is shown that with the parameters selected, the maximum pressures arising in the cylinder cavities during braking exceed their rated values only slightly. Orig. art. has: 5 figures, 1 table, and 7 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

KC
2/2

ACCESSION NR: AT4018284

S/2905/63/000/96-/0019/0027

AUTHOR: Kozhevnikov, S.N.; Prazdnikov, A.V.; Miroshnichenko, B.I.

TITLE: Electronic simulation of dynamic processes in hydraulic mechanisms

SOURCE: AN SSSR. Institut mashinovedeniya. Teoriya mashin i mekhanizmov (Theory of machines and mechanisms), no. 96-97, 1963, 19-27

TOPIC TAGS: electronic model, simulation, electronic simulation, hydraulic mechanism, hydraulic prime mover, prime mover, hydraulic model

ABSTRACT: Hydraulic prime movers, in addition to electrical and pneumatic ones, are presently beginning to be used more and more in the metallurgical industry. Equations for the transient processes in hydraulic systems were therefore investigated on an electronic model, by the Institut chernoy metallurgii AN Ukr SSR (Institute of Non-Ferrous Metallurgy AN Ukr SSR). The system included an automatic manipulator and a blooming mill tilter. These two parts are very complicated, because it is very difficult to automate them using electronic drives. An electronic device was therefore designed to simulate the equations for the hydraulic system. (See Fig. 1 of the Enclosure.) This device produced oscillograms showing the operation of the system. Although the data obtained for the entire investigation

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ACCESSION NR: AT4018284

were incomplete, they showed the wide possibilities of electronic models for solving similar problems. Orig. art. has: 5 figures and 10 equations.

ASSOCIATION: Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering AN SSSR)

SUBMITTED: 00

DATE ACQ: 19Mar64

ENCL: 01

SUB CODE: EC

NO REF SOV: 000

OTHER: 000

Card 2/3

ACCESSION NR: AT4018284

ENCLOSURE: 01

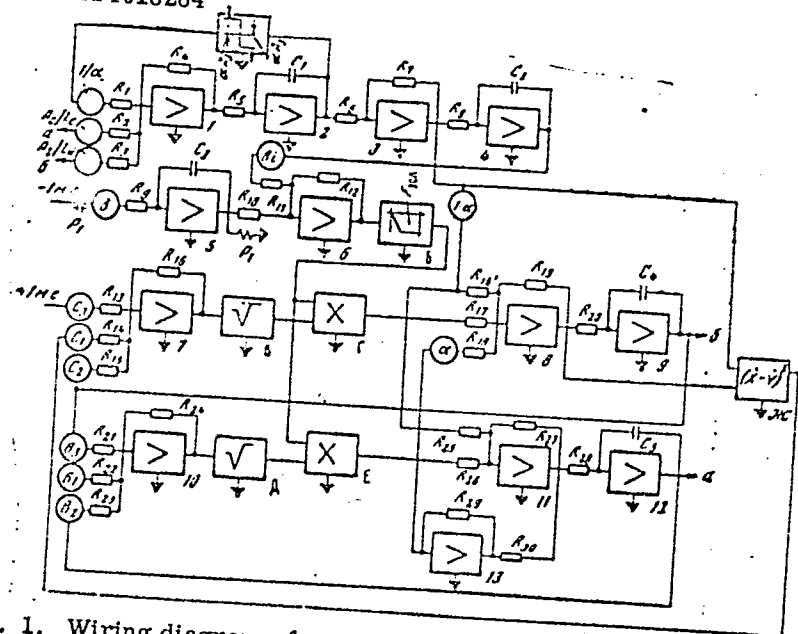


Fig. 1. Wiring diagram of an electronic model of a hydraulic drive.

CARD 3/3

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V.; MIROSHNICHENKO, B.I.

Electronic simulation of dynamic processes in hydraulic mechanisms.
Teor. mash. i mekh. no.96/97:19-27 '63. (MIRA 17:1)

PRAZDNIKOV, A.V., inzh.

Law of hydraulic drive motion with power transmission from
hydraulic accumulators. Izv.vys.ucheb.zav.; chern.met.
no.8:70-80 Ag '58. (MIRA 11:11)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Power transmission) (Metalworking machinery)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V., inzh.; CHERMYSHEV, A.N., kand.tekhn.
nauk; GRINBERG, S.D., inzh.

Possibilities of increasing the output of a pilgrim pipe rolling
mill. Izv. vys. ucheb. zav.; chern. met. no.7:91-107 J1 '58.

1. Dnepropetrovskiy metallurgicheskiy institut. 2. Chlen-korrespondent
AN USSR (for Kozhevnikov).
(Rolling mills)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V., kand.tekhn.nauk; LENSKIY, A.N., inzh.;
BOL'SHAKOV, V.I., inzh.

Investigating on an electron model the performance of the main
line of a Pilgrim mill. Trudy Inst.chern.met.AN URSR 16:88-
104 '62. (MIRA 15:12)

1. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).
(Rolling mills)
(Electronic analog computers)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V., kand.tekhn.nauk; LOSHKAREV, V.I.,
inzh.

Automatic indicator of plunger position on a Pilgrim mill feed
mechanism. Trudy Inst.chern.met.AN URSR 16:105-111 '62.
(MIRA 15:12)

1. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).
(Rolling mills) (Feed mechanisms)

KOZHEVNIKOV, S.N.; PRAZDNIKOV, A.V.; IOFFE, A.M.

New trends in the creation of high-speed feeding devices for
pilgrim mills. Metallurg 9 no.9:21-23 S '64. (MIRA 17:10)

ACC NR: AT7000712

SOURCE CODE: UR/0000/66/000/000/0045/0050

AUTHOR: Kozhevnikov, S. N. (Corresponding member AN UkrSSR); Prazdnikov, A. V. (Candidate of technical sciences); Ioffe, A. M. (Candidate of technical sciences); Fabrika, L. P. (Engineer)

ORG: None

TITLE: Use of electronic simulation for studying the hydropneumatic system of the feed mechanism on a pilger mill

SOURCE: Ukraine. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya. Gidroprivod i gidropnevmoavtomatika (Hydraulic drive and hydropneumatic automation), no. 2, Kiev, Izd-vo Tekhnika, 1966, 45-50

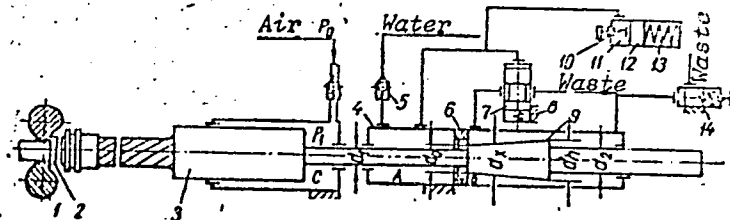
TOPIC TAGS: rolling mill, pneumatic servomechanism, hydraulic device, computer application, analog computer

ABSTRACT: Electric simulation is used for studying the operation of the feed mechanism on a pilger mill. This method consists of using an analog computer for solving the equation of motion of the moving masses in the mechanism. Shown in the figure is a feed mechanism for production of seamless tubes 219-325 mm in diameter. The unit contains a hydraulic brake consisting of housing 4 with diaphragm 6. Inside the housing is tapered plunger 9 with a rod rigidly connected to plunger 3. The entire braking system is filled with water which is fed in at a pressure of $58.9 \cdot 10^4$ N/m².

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ACC NR: AT7000712

Rolls 1 move sleeve with mandrel 2 as well as plungers 9 and 3 from the extreme left-hand position toward the right. During this process, water from the main line flows through check valve 5 into cavities A and B. After completion of rolling, the moving masses are braked by compressed air in chamber C and begin to move toward the left. On the return path, water from cavity B flows freely through valve 7 into the waste line until the end of the tapered plunger covers the diaphragm. At this point, the fluid pressure in chamber A rises and valve 7 cuts off the waste line. This begins braking of the moving masses. The fluid in chamber A is forced through the annulus between the tapered plunger and the diaphragm into chamber B and through pressure valve 14 into the waste line. Valve 14 is used for regulating braking conditions. The length of the braking path is adjusted by using screw 10 for setting piston 12 in measuring unit 11. When plunger 9 enters diaphragm 6, piston 12 is moved by fluid pressure to the extreme right-hand position. This action delivers a fixed quantity of fluid to



Card 2/3

ACC NR: AT7000712

the cylinder of measuring unit 11 without resistance, so that there is no braking force on a given section of the braking path. When piston 12 stops in the extreme right-hand position, braking force develops in the hydraulic braking system. After completion of braking at the beginning of the rolling process, spring 13 returns piston 12 to the original position while spring 8 returns slide valve 7 to the neutral position. Electronic simulation was used for studying motion of the masses in this mechanism as a function of their magnitude, the working capacity of the feed mechanism was determined and operation of the hydraulic brake was checked with variations in parameters. The program included simulation of both the acceleration and braking of the moving masses. The resultant data show that an increase in air pressure considerably reduces the operating cycle of the mechanism accompanied by a sharp increase in deceleration of the moving masses past the permissible value. An increase in the gap between the tapered plunger and the diaphragm to more than 0.4 mm results in an excessive final velocity of the moving masses during braking. Repair measures are called for when the clearance reaches this limiting value. The given data agree with those of dynamic computation. Orig. art. has: 5 figures.

SUB CODE: 13/ SUBM DATE: 29Jun66

Card 3/3

PRAZDNIKOV, G. (g.Nikolayevsk-na-Amure, Khabarovskiy rayon)

Rare guests. Sov. profsoiuzy 6 no.6:73 Je '58.

(MIRA 11:7)

1.Predsedatel' gorkoma profsoyuza rabotnikov gosudarstvennykh
uchrezhdeniy.

(Nikolayevsk-on-Amur--Trade unions)

ADZHIMOLAYEV, I.A.; PRAZDNIKOV, V.P.

Nerve and muscle refractivity and effects of curare in dogs of various ages. Trudy Inst. normal. pat. fiziol. AMN SSSR 12:5-6 '64.

(MIRA 12:6)

1. Laboratoriya vozrastnoy fiziologii i patologii (rav. -- prof. I.A. Arshavskiy) Instituta normal'noy i patologicheskoy fiziologii AMN SSSR.

MIRHAYLOVA, I.G. (Murmansk); PRAZDNIKOV, Ye.V. (Murmansk)

"Electron microscope studies of sexual and somatic cells" by
I.B.Tokin. Reviewed by I.G.Mikhailova, E.V.Prazdnikov. Vest.
LGU 17 no.15:146-148 '62. (MIRA 15:8)
(CELLS) (ELECTRON MICROSCOPY) (TOKIN, I.B.)

MIKHAYLOVA, I.G.; PRAZDNIKOV, Ye.V.; PRUSEVICH, T.O.

Morphological changes in fish tissues around the larvae of some
parasitic worms. Trudy KMBI no.5:251-264 '64. (Minsk 1964)

1. Laboratoriya srevnitsel'noy i eksperimental'noy embriologii
(zav. - B.P.Ioskin) Murmanskogo morskogo biologicheskogo instituta.

PRAZDNIKOV, Ye.V.; GROKHOL'SKIY, G.A.; MIKHAYLOVA, I.G.

Characteristics of aseptic inflammation in the skin of white rats
following repeated resections. Vest.LGU 16 no.9:140-144 '61.
(MIRA 14:5)

(SKIN--INFLAMMATION)

PRAZDNIKOV, Ye.V.; NIKHAYLOVA, I.G.

Some protective tissue reactions of the embryos of pink salmon.
Dokl. AN SSSR 164 no.5:1194-1196 '65.

(MIRA 18:10)

1. Murmanskii morskoy biologicheskii institut Kolt'skogo filiala
im. S.M.Kirova AN SSSR. Submitted December 7, 1964.

PRACHTNIKOV, Ye.V.

Reactivity of the ...
salmon. DOKL. Ak. ...

(1974) 18:109

1. Muramatsu, Y. ...
ra. D.M. Kiseva ... Submitted ... 7, 1974.

PRAZDNIKOV, Ye.V.; MIKHAYLOVA, I.G.; LUPPOVA, Ye.S.

Methodology for the establishment of the antibiotic activity of
an inflammatory focus in man. Antibiotiki 9 no.7:614-616 J1 '64.
(MIRA 18:3)

1. Kafedra embriologii (zav. - prof. B.P. Tokin) Leningradskogo
universiteta.

B

USSR/General Biology. Cytology

Ab's Jour : Ref. Zhur-biol., No 13, 1957, 57117

Author : Prazdnikov Ye. V.

Inst : Not given

Title : On the Relationship Between the Size of the Nerve Cells Nuclei and the Physiological Condition of an Innervated Organ.

Orig Pub : Sb. nauchn. rabot. zhur. otd. Vses. o-va anat. tomov. histologov i embriologov, 1957, vyp. 1, 28-30

Abstract : Observations were conducted of the modifications in the karyoplasm of neurons in the physiological hypertrophy of the innervated organ of uterine-vaginal nerve anastomosis of white female rats in pregnancy, parturition, and postnatal period in order to clarify the effect of func-

Card 1/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-005

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... No 13, 1957, 57117
of the size of the neuron nuclei. It was
published that an increase in the diameter
of the nuclei may be observed during
the first half of the pregnancy period.
During the period of vigorous functional du-
ty, the decrease in the diameter of the nuclei
in the postnatal period is a slow and
gradual restoration of the diameter of the nuclei
of the ganglia cells. Different degrees of
functional activity have a different effect on
the size of the neuron nuclei.

USSR/General Biology. Cytology

Abs Jour : Ref. bur-biol., No 13, 1-53, 27118

Abstract : "elements of the neuroblast type." Atrophic changes of the nerve cells accompanied by whole accumulations of elements of the neuroblast type are observed in the ganglia of the uterine cervix of castrated rats. A rapid restoration of the size of the nerve cell nuclei with a simultaneous diminution of the number of elements of the neuroblast type takes place following the administration of sex hormones to the castrated animals.

Card 2/2

MIKHAYLOVA, I.G.; PRAZDNIKOV, Ye.V.

Inflammatory reactions in mussels (*Mytilus edulis* L.)
of the Barents Sea. Trudy MMBI no.4:208-220 '62.
(MIRA 15:11)

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embriologii (zav. - B.P. Tokin) Murmanskogo morskogo
biologicheskoy institut.

(Barents Sea--Mussels)
(Inflammation)

PRAZDNIKOV, Ye.V.; MIKHAYLOVA, I.G.

Characteristics of early inflammatory reactions in some
Coelenterata (Staurophora mertensii Brandt, 1835, Suralia
aurita L., Beroe cucumis Fabr.). Trudy MMBI no.4:221-228
'62. (MIRA 15:11)

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(zav. - B.P. Tokin) Murmanskogo morskogo biologicheskogo
instituta.
(Coelenterata) (Inflammation)

ПРАЗДНИКОВА, Н.В.

PRAZDNIKOVA, N.V.; FIRSOV, L.A.

Interrelationship of the motor and vocal components of conditioned reaction in monkeys (capuchins) in the modification of one of the members of a chain stimulus. Trudy Inst.fiziol.no.2:306-315 '53.
(MLRA 7:5)

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PRAZDNIKOVA, N.V.

Conditioned digestive motor reflexes and conditioned inhibition in
fish. Trudy Inst.fiziol. no.2:370-383 '53. (MLRA 7:5)

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(zaveduyushchiy - L.G.Voronin). (Conditioned response) (Fishes--
Physiology)

PRAZDNIKOVA, N.V.

Delayed conditioned reflexes in fishes. Trudy Inst. fiziol. 10:
273-283 '62 (MIRA 17:3)

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Pavlova AN SSSR.

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Method of investigation of motor-feeding conditioned reflexes in fish.
Zh. vysshei nerv. deiat. 3 no.3:464-468 May-June 1953. (CLML 25:4)

1. Institute of Physiology imeni I. P. Pavlov of the Academy of Sciences
USSR.

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Conditioned motor food responses to a chain of stimuli in fish.
Zh. vys. nerv. deiat. 5 no.6:901-911 N-D '55. (MLRA 9:3)

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nosti Instituta fiziologii imeni. I.P. Pavlova Akademii nauk SSSR.
(REFLEX, CONDITIONED,
digestive reflexes to chain of stimuli in fish)

PRAZDNIKOVA, N.V., kand.biol.nauk

Some data on the study of higher nervous activity in fishes by the method of conditioned motor food reflexes. Trudy sov. ikht. kon. no.8:31-37 '58. (MIRA 11:11)

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(Fishes--Physiology) (Conditioned response)